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ABSTRACT

This study was conducted to survey and develop a number of tools to help identify strengths and weaknesses of the majors and program in political science at Knox College. The data used were cumulative average in political science, graduate record examination (seniors only), SAT's (Verbal and Mathematical), options open scenarios 1 and 2, grade in Political Science 201 (introductory course), cumulative departmental evaluation of "options open" test of students, and intensity of counseling of students. Conclusions include: (1) the intensity of counseling activity is high and should be maintained at this or a higher level; (2) the "options open" test is an important test with high correlation to success in majoring in political science; (3) the evaluation of students according to individual professors' assessments of their openness to diverse sources of information and to a variety of alternative political choices should be gathered and made available to the department as a whole; and (4) substituting a new and simplified record form, which maps out where a student's strengths are and where he needs support. (TA)

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FINAL REPORT

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IDENTIFICATION AND DIRECTED COUNSELING OF POLITICAL SCIENCE MAJORS

Dr. Rene N. Ballard
Dr. Frank Feigert
Dr. Robert Seibert
Knox College
Galesburg, Illinois 61401

May 1970

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HEALTH, EDUCATION, AND WELFARE

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

Acknowledgments:

The writers would like to thank Dr. George Melville, Director of Institutional Research at Knox for untiring assistance to us in preparing the research design and helping us whenever we tended to become entangled in data analysis. We would also like to thank Knox President Sharvey G. Umbeck for his encouragement, understanding, and critical assistance at every point of our study.

Dr. Rene N. Ballard, Director
Dr. Frank Feigert, Researcher
Dr. Robert Seibert, Researcher

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FINAL REPORT

OE Bureau of Research: District V Grant Number: OEG-5-9-235136-0012(010)

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1. Introduction - Problems Under Consideration:

The Department of Political Science at Knox College has long been concerned about judging the effectiveness of our teaching and counseling of majors. This grant enabled us to survey and/or develop a number of tools to the end of identifying strengths and weaknesses of our majors and of our program. Data was collected during one year on all majors, sophomore through senior years. The examination of this data was oriented toward the isolation of indicators that would enable us to counsel our students more effectively and to understand the complex variables involved in the successful completion of the major. The variables utilized in this study are included in pages 8, 9, 10 of this report.

2. Methods:

Data was collected on all majors in the department of Political Science during the school year 1969-1970. These variables were inter-correlated and subjected to multiple-regression analysis. A full inter-correlation matrix for these variables is included in the regression process. Since a number of the variables were obviously measuring similar or identical phenomena, an inflated multiple r was produced. The findings are summarized below:

Population	Dep. Variable	R	r^2
All Majors (80)	Pol. Sci. Cum. Av.	.87	.76
Seniors (30)	Pol. Sci. Cum. Av.	.98	.97
	Grad. Rec. Exam	.89	.79
Juniors (22)	Pol. Sci. Cum. Av.	.94	.88
Sophomores (28)	Pol. Sci. Cum. Av.	.85	.72

Standard statistical procedure calls for the squaring of multiple r to explain the variance accounted for by the correlation. All of the preceding correlations are highly significant, suggesting that we have succeeded in defining a number of variables particularly relevant to success in the political science major at Knox.

These tests, however, are cumbersome. In order to develop a more efficient set of variables, we decided to eliminate as many variables as possible, particularly those that might overlap significantly in measurement. Some variables, such as GRE score for instance, were not pertinent to students other than Seniors, and

as such could be dropped from the regressions for Sophomores and Juniors. Other correlations, such as sex, were dropped since they seemed essentially unrelateable other than by random or chance occurence. Our procedure essentially involved systematically dropping variables of low correlation with the dependent variable, or those variables that would present great difficulty in obtaining uncontaminated data in the future. The resulting regressions are presented below.

Our decision to use the cumulative grade average in the department of political science as the dependent variable was based on the fact that it is an index available throughout the career of the individual major. The most significant regressions combined with ease of compilation and efficiency of evaluation, utilized the departmental average as the dependent variable and the following variables as independent: SATV, SATM, Options Open Scenario 1, Options Open Scenario 2, Grade in Political Science 201 (introductory course), cumulative departmental evaluations of Options/Open of Students, Intensity of Counseling of Students, and Graduate Record Examination (seniors only).

Table of Multiple Regression Coefficients

Population	Dep. Variable	R	r^2	Table App.
All Majors	Dep. Average	.73	.53	A
Seniors	Dep. Average	.76	.58	B
	GRE	.74	.55	C
Sophomores	Dep. Average	.77	.60	D

3. Findings and Recommendations:

The multiple correlations are significantly high in all cases, suggesting that our elimination of 2/3's of our initial variables still leaves us with variables of sufficient discriminatory powers. Accordingly, the Department of Political Science has developed forms and procedures whereby these variables can be collected, evaluated, and disseminated within the department to the end of advising students on an intensive basis. These instruments are enclosed in Appendix F and G.

On the basis of this study, the Department has concluded that certain activities of the Department should be intensified. The intensity of counseling activity is high at this point and should be maintained at that or an even higher level. The evaluation of students according to individual professors' assessments of his openess to diverse sources of information and to a variety of alternative political choices should be gathered and made available to the department as a whole. The importance of the introductory course to success in the major is underscored by both its intercorrelation with dependent variables and by its effect on the multiple regression when dropped from the calculations (R

from .73 to .57).

Of particular interest is the fact that the multiple r for the sophomores was nearly the same as the multiple r for the graduating seniors, although the intercorrelations vary. This suggests that these variables are not only capable of explaining the variance for majors as they complete the prescribed course sequences, but that they can serve as well as indicators of the likelihood of success in the major as early as the sophomore year. The scenarios seem much more useful on the sophomore level, for instance, than on the senior level and should be used in the early identification of strength/weakness in majors. The advantages gained from having a set of descriptive variables useful, without change in scope and definition, for all majors in the department is apparent.

We also find it interesting to note that the battery of scales included in our initial complex of variables designed to measure such psychological dimensions as Political Cynicism, Morale, Faith in People, etc., did not contribute greatly to the discriminatory powers of the design. They universally exhibited low correlation coefficients with those variables we have designated dependent, particularly the cumulative average in political science. As these are standard tests of some generally recognized sophistication, as word to explain their lack of utility is in order. We recognize two possible limitations on their use in our context. First, our population is neither random, nor distributed in any way similar to normal population distributions. It is, in short, a population highly skewed in terms of its background characteristics and intellectual capabilities. Thus, these tests, intended for general use, are not applicable to our particular population. Secondly, there is a possible contamination element, deriving from the exposure of the population to the theory of such testing, if not exposure to those particular tests themselves. Many of the tests occur frequently in the journal and professional literature of political science, and it is certainly not beyond the realm of speculation that a proportion of the subject population would be sophisiticated enough to recognize minor modifications of these scales. According to these rationale, we have dropped them from the compilation of our multiple regressions.

One effect not included in the computations, but nonetheless intriguing and important to our research, was the effect that our testing program had on our majors. It is, of course, difficult to assess with objectivity the complete effect this study had on majors, but we subjectively posit a variant of the well-known "Hawthorne Effect." In this type of situation, the changes made are secondary in effect when compared to the impact that knowledge that management is interested in staff asserts. In short, we posit that the very fact of our interest in the progress and problems of our majors produced a reciprocal concern and increased interest. An already strong rapport has intensified and the ease of counseling

students, particularly those in difficulty, has increased. We suggest, therefore, that the department take pains to ensure that the majors are aware that our concern is ongoing and directed to their eventual successful completion of the major.

Finally, we wish to comment on the effectiveness of the scenaria devised by the department (see Appendix). Although these tests inter-correlated only marginally, they contribute meaningfully to the multiple-regression coefficients. We posit, therefore, that although there is some distinct overlap between the tests, that they are for some reason measuring related, but not identical, phenomena. We feel that we are on the right track in this endeavor and propose in the following year to attempt to refine the instruments and apply them to a wider, more randomly selected college population. As they attempt to measure psychological variables, they are subject to the same possible limitation we mentioned in another context above. We particularly wish to emphasize that continued research on these scenaria involving the utilization of "avoidance-avoidance response" - or the tendency to avoid making a decision avoidance in character - may prove useful. These modified scenaria will necessitate continued, ongoing research. They do, however, have the advantage of being unpublished and thus the possible level of contamination is reduced. The department, in conjunction with other appropriate departments on the campus, will continue the work begun in this area.

In conclusion, the inter-correlation and multiple regression of the variables discussed here provided us with the basis for eliminating many variables while retaining confidence in the following:

Cumulative Departmental Average,	dependent variables
Scholastic Apt. Test, Verbal	independent variable
Scholastic Apt. Test, Math	independent variable
Options Open Scenaria, 1 and 2	" " " "
Grade in P. S. 201	" " " "
Graduate Record Exam	" " " "
O/O Faculty Evaluation	" " " "
Average Intensity of Counseling (Appraisal)	" " " "

Let us now turn to the instruments the department has developed in order to facilitate the continuing use of these variables in the evaluation and counseling of majors in the department.

Conclusions and Recommendations:

As reported under "Findings" above, we are satisfied that we have identified an important test with high correlation to success in majoring in Political Science at Knox College. This test, called "Options Open" can and will be refined as we work with departmental majors over the next several years. These tests are included in our Progress Report.

Early in our work we became concerned over the amount of record keeping on each student that began to be amassed. It was felt to be absolutely necessary to keep up to date, clear records that would be usable by each faculty member involved in counseling and to devise a time schedule when this data could best be recorded and used by the faculty. We were equally concerned to produce a clearly understood graph which could be shown to the student which would explain where the student's strengths were and where he needed to support weaknesses. A great deal of difficulty was circumvented when Dr. George Melville, Knox Director of Institutional Research, devised a new Student Record form which so clearly reported a student's standing at the beginning of each term that we could reduce not only the amount but kinds of records which we earlier anticipated and prepared when first submitting our proposal. This new form is attached to this report as Appendix E.

The new records for our student counseling consequently could be simplified for assessing and recording by the Political Science faculty. This in turn made it possible to chart a student's progress more easily and to use the information in counseling. These new forms are attached as Appendix F and G.

One of the advantages of having a chart which can be shown the student was first suggested by Knox President Sharvey G. Umbeck. The success of tennis coaches who could chart all the shots a player makes in a game, clearly indicating where and when points were won and lost served clearly as convincing evidence to the player which part of his game needed work and strengthening. We acknowledge this charting is more difficult in a discipline like Political Science, but the effect of an accumulation of strengths and weaknesses which can be shown the student will have a similar effect in convincing him where he needs to put more effort. We intend to alter these charts as experience indicates.

In order to keep the record keeping current and available to all the members of the department, one person will be assigned the responsibility of setting deadlines and distributing evaluation materials. The critical periods for administrative efficiency in record keeping and evaluation are during the student's junior year for accumulating data and the senior year for evaluative processes. The person who administers the program will distribute the materials at the end of each term and evaluate the collected data. By close administrative attention, much of the difficulty earlier reported can be eliminated.

All Majors, N=80

APPENDIX A - COUNSELING INDICATORS

																						Multiple R	R^2
1. SEX	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
2. SAT-V	-29																							
3. SAT-M	-33	76																						
4. Ballard	-12	22	10																					
5. AOE	-17	22	22	21																				
6. Seibert #2	-04	0	-03	18	31																			
7. SPE	-22	08	01	22	33	34																		
8. FIP	-04	15	18	28	38	09	21																	
9. HS Rank	18	06	03	02	-12	05	-09	05																
10. Pol. Cyn.	06	03	03	03	03	07	05	07	09															
11. Pol. Dis.	-22	23	19	10	26	32	28	08	06	19														
∞ 12. GA	08	03	-01	08	16	43	-09	-12	05	10	49													
13. M	15	-07	-08	12	21	33	-13	-20	-13	-29	01	63												
14. PS 201	04	31	25	18	03	03	-07	03	14	07	03	-06	-11											
15. PS 204	07	-06	-11	11	02	-19	09	10	02	-06	21	-22	-26	20										
16. #PS courses	-15	10	18	-01	18	-01	21	18	11	04	05	-19	-20	-18	34									
17. PS Cum	18	18	17	18	02	-10	-04	15	25	11	06	-05	-16	58	27	-31						87	76	
18. GRE																								
19. Comp																								
20. Rank Ord.	13	10	04	09	-06	-08	-11	14	26	13	08	18	-23	46	34	06	72							
21. Counsel.	23	10	17	10	08	-04	05	10	05	09	-32	-23	-16	26	19	09	37		50					
22. O/O Evaln.	03	05	05	20	18	03	03	18	16	08	15	02	-17	39	20	-02	56		69	49				

APPENDIX B - COUNSELING INDICATORS

Seniors, N=30

																						Multiple	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	R	R^2
1. Sex																								
2. SAT-V	21																							
3. SAT-M	-11	09																						
4. Ballard	20	20	13																					
5. AOE	-12	38	30	19																				
6. Seibert #2	16	29	-21	-01	-14																			
7. SPE	-02	04	-20	01	18	02																		
8. FIP	19	05	40	15	19	-05	15																	
9. HS Rank	24	13	15	12	-22	10	-07	16																
10. Pol. Cyn.	-13	-15	-27	-20	0	-14	29	-18	-13															
11. Pol. Dis.	-03	25	10	28	05	-15	01	21	14	-28														
12. GA	16	39	-06	14	11	0	-50	01	22	-32	35													
13. M	26	30	-18	-01	-07	-03	-48	-15	-05	-17	-08	78												
14. PS 201	03	32	-10	08	-11	55	-02	-11	-24	-05	11	-07	-09											
15. PS 204	03	-16	-06	09	-24	-15	-01	15	11	-07	54	-04	-35	26										
16. #PS courses	05	30	15	02	37	04	28	19	-01	13	33	-07	-15	52	34									
17. PS Cum	30	12	04	19	-11	08	-10	09	52	-13	53	21	-12	44	49	46							98	97
18. GRE	09	13	17	10	-02	02	-17	18	46	23	05	05	-13	35	30	39	41						89	79
19. Comp	20	0	13	22	-13	-10	-05	14	56	0	31	02	-20	31	37	31	79	61						
20. Rank Ord.	11	16	15	19	01	09	03	19	47	-21	63	22	-18	37	45	46	91	33	73					
21. Counsel.	13	14	-15	16	18	11	13	-04	13	13	43	20	-10	30	35	51	68	14	40	73				
22. O/O Evaln.	-05	-11	17	34	-15	06	07	-02	36	-23	40	04	-27	27	15	21	66	04	45	67	60			

Sophomores, N=28

APPENDIX C - COUNSELING INDICATORS

																						Multiple R	R^2
1. Sex	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	.	
2. SAT-V	-25																						.	
3. SAT-M	-28	72																					.	
4. Ballard	-02	17	05																				.	
5. AGE	09	16	20	-07																			.	
6. Seibert #2	13	-02	-21	20	10																		.	
7. SPE	-34	05	09	36	11	07																	.	
8. FIP	-05	36	28	23	07	-07	36																.	
9. HS Rank	04	21	03	15	06	-13	10	11															.	
10. Pol. Cyn.	22	02	06	18	-07	-04	-03	27	19														.	
11. Pol. Dis.	-09	-01	-12	05	09	-09	40	13	24	-55													.	
12. GA	52	-20	-32	-43	01	19	-53	-46	-20	-26	-04												.	
13. M	36	-09	-11	-21	18	13	-52	-71	-15	-34	-03	65											.	
14. PS 201	20	04	07	27	08	02	06	19	10	24	-11	-25	-13										.	
15. PS 204	19	-23	-28	24	29	19	47	06	12	-13	42	-20	-04	23									.	
16. #PS courses	08	-27	-34	31	-11	17	23	17	-20	32	-17	-18	-32	28	42								.	
17. PS Cum	28	07	08	25	37	10	44	43	13	30	-06	-31	-33	39	49	40						85	72	
18. GRE																							.	
19. Comp																							.	
20. Rank Ord.	26	-09	-18	26	0	06	21	26	07	30	-28	-25	-22	41	35	71	74						.	
21. Counsel.	*	*	*	*	*	*	*	-88	*	*	*	*	*	52	-88	*	*				*		.	
22. O/O Evaln.	*	-01	*	*	*	83	*	*	*	*	-03	*	38	*	*	*	*				*	*		

APPENDIX D

APPENDED TABLES A - D

Table A: Intercorrelational Matrix and Multiple Regression for All Majors

Dependent Variable: Departmental Average		$\underline{R}$	$\underline{R^2}$
Independent Variables:	SAT-Verbal	0.177	
	SAT-Math	0.168	
	O/O-Ballard	0.184	
	O/O-Seibert	0.023	
	P. S. 201	0.579	
	O/O Faculty Evaluation	0.623	
	Av. Int. of Counseling	0.113	
	Multiple R.....	0.725	.53

Table B: Intercorrelation Matrix and Multiple Regression for Seniors

Dependent Variable: Graduate Record Exam		$\underline{R}$	$\underline{R^2}$
Independent Variables:	SAT-Verbal	0.125	
	SAT-Math	0.172	
	O/O-Ballard	0.100	
	O/O-Seibert	-0.020	
	P. S. 201	0.347	
	Dept. Average	0.407	
	O/O Faculty Evaluation	-0.029	
	Av. Int. of Counseling	0.148	
	Multiple R.....	0.74	.55

Table C: Dependent Variable: Departmental Average

	Multiple R.....	0.76	.58

Table D: Intercorrelation Matrix and Multiple Regression for Sophomores

Dependent Variable: Departmental Average		$\underline{R}$	$\underline{R^2}$
Independent Variables:	SAT-Verbal	0.021	
	SAT-Math	0.069	
	O/O-Ballard	0.205	
	O/O-Seibert	0.357	
	P. S. 201	0.393	
	O/O Faculty Evaluation	0.649	
	Av. Int. of Counseling	0.577	
	Multiple R.....	0.77	.60

APPENDIX E

KNOX COLLEGE EDUCATIONAL DEVELOPMENT RECORD

Adviser: Mr. R. N. Ballard Date Entered: 9/66

Name:

Date and Place of Birth:
December 24 1948
Evanston Illinois

CEEB		Achievement Test Scores		
Verb	Math	Math 1	Math II	For Lang
636	563	597		Latn 65

Name and Address of High School:
Alvernia High School
Chicago Illinois

High School Class Rank	1/10	1/4
17/287	1	1

High School Units

Eng	Fr	Ger	Lat	Russ	Sp	Hist (Am)	Hist (other)	Alg	Plgm
4.0	0.0	0.0	2.0	0.0	0.0	1.0	2.0	3.0	

Trig	Sogm	Civics	Soc St	Econ	Pol Sci	Bio	Chem	Phys
1.0		0.0		0.0	0.0	1.0	1.0	1.0

4.5 Total Credits Needed, plus comprhensive exam
3.43 upperclass grade index
300 level courses - complete
1 more elementary phys. ed. course(s) needed
Math proficiency - complete
Language proficiency - complete
Sophomore competency - complete
Distribution Requirements
  Humanities - Complete
  Math-science - 1.0 more course(s) needed
  Social studies - complete

Courses taken in major area - Political Science

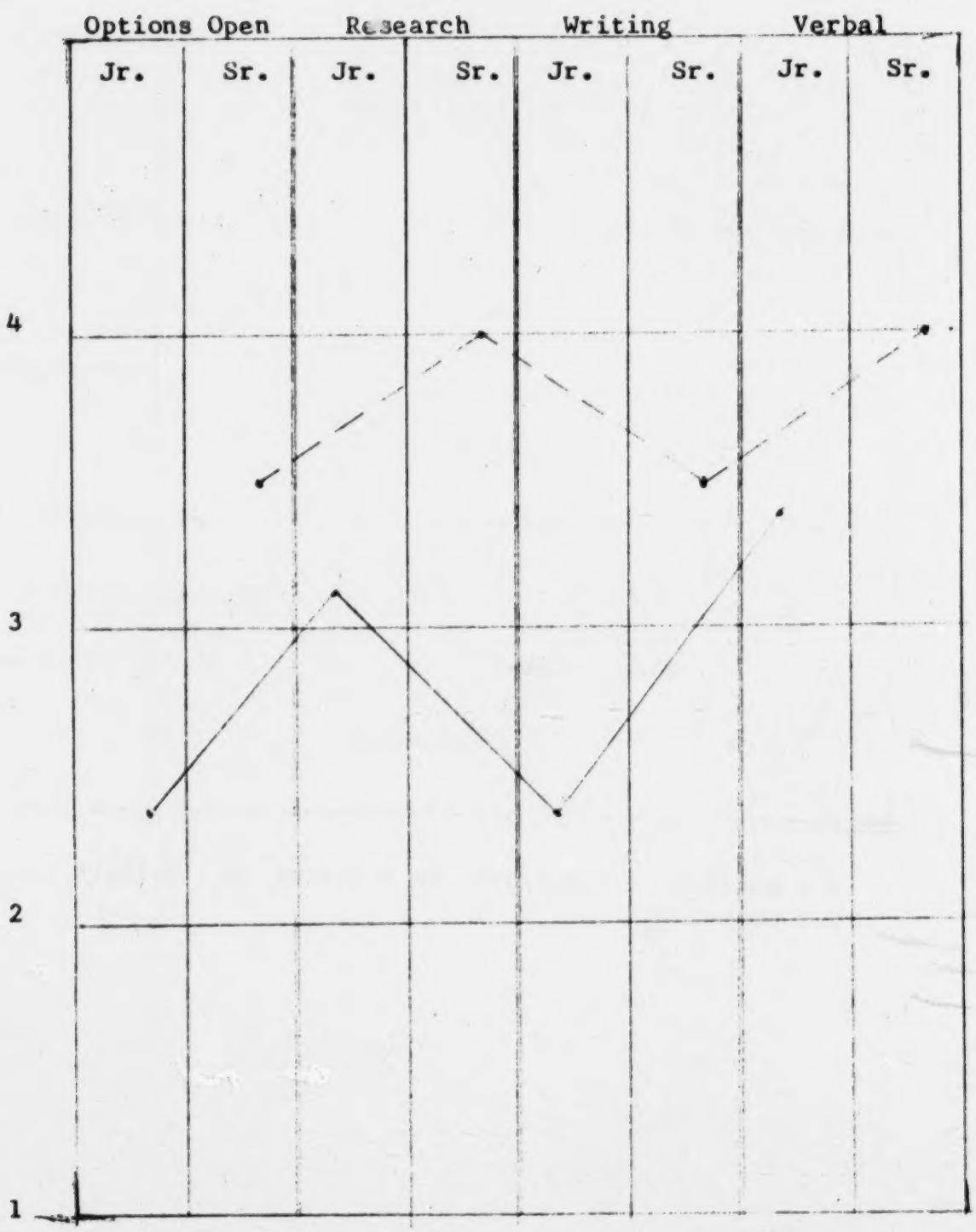
PS	201	Am Natl Govn	1.0	A-
PS	343	Cont Soc Theo	1.0	A
Hist	202-2	Amer Hist	1.0	B+
PS	216	Fr Pol Sov Un	1.0	A
PS	241	Pol Par Pr Gr	1.0	A
Econ	211	Capitalism	1.0	A
PS	204	Sc Meth Pol Sc	1.0	A
PS	311	Internat Rela	1.0	B
Hist	324	Germ 1914-45	1.0	B+
PS	202	St Reg Local	1.0	A
PS	351	Indep Studies	1.0	A+
PS	321	Am Natl Adm	1.0	A-
PS	322	Probs in Adm	1.0	*
PS	350	Methods Lab	1.0	*

3.75 Average in Major Area

APPENDIX F
SUMMARY EVALUATION

Name Date

Future Plans:

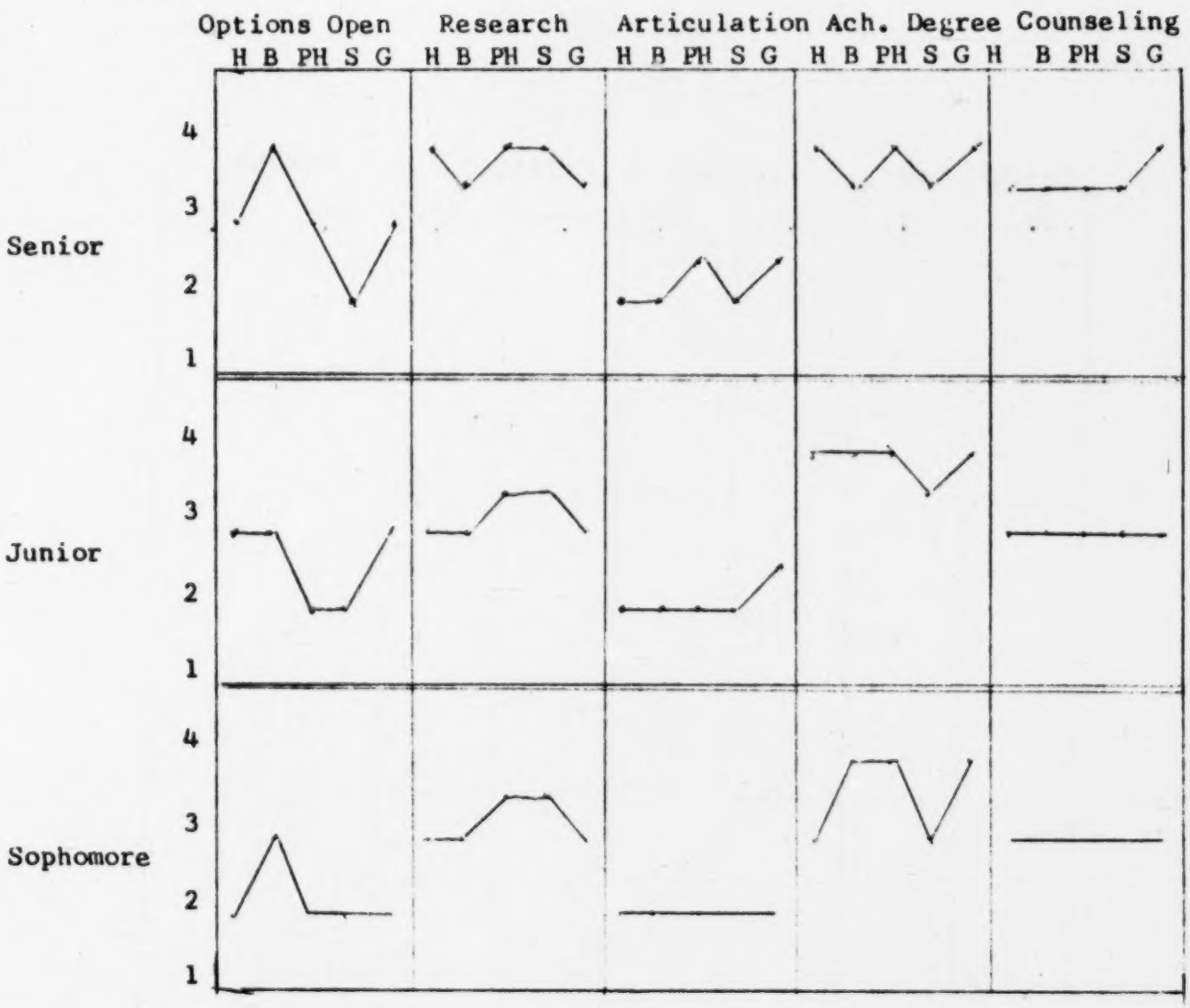


4 = Options most open, greatest ability (research, writing, verbal)

1 = Options least open, least ability

APPENDIX G
INSTRUCTORS' EVALUATIONS

Student Name:



H = Houston B = Ballard PH = Haring S = Seibert
G = Greenberg